DEPARTMENT OF AGRICUL. URE
DAIRY AND COLD STORAGE BRANCH
OTTAWA - - CANADA

THE ISLAND OF ORLEANS CHEESE

BY

J. C. CHAPAIS

Assistant Dairy Commissioner

BULLETIN No. 37
DAIRY AND COLD STORAGE SERIES

OTTAWA
GOVERNMENT PRINTING BUREAU
1913

40000—1

LETTER OF TRANSMITTAL.

OTTAWA, March 15, 1913.

To the Honourable
The Minister of Agriculture.

SIR,—I beg to submit a manuscript copy of a description of the cheese which has been made for many years by certain families living on the Island of Orleans, together with some notes on the process of its manufacture, which has been prepared by Mr. J .C. Chapais, Assistant Dairy Commissioner.

This description of the Island of Orleans cheese was first prepared by Mr. Chapais for an article in the *Journal of Agriculture and Horticulture*, edited by the Quebec Department of Agriculture. It was afterwards published in pamphlet form. The present copy has been somewhat revised.

I have the honour to recommend that it be printed for general distribution as Bulletin No. 37 of the Dairy and Cold Storage Series.

I have the honour to be, Sir,

Your obedient servant,

J. A. RUDDICK,
Dairy and Cold Storage Commissioner.

FIGURE 1--MOULD.

FIGURE 2--PAN WITH MOULDS.

FIGURE 1 RACK.

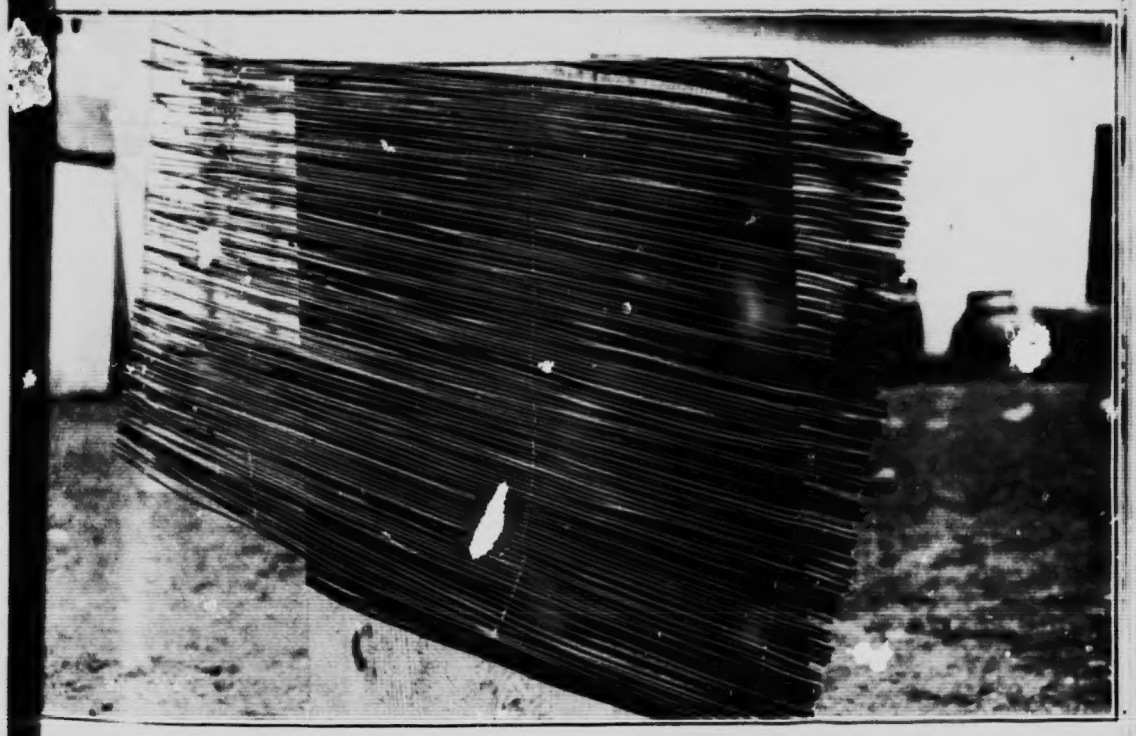


FIGURE 2—RUSH MAT.

THE ISLAND OF ORLEANS CHEESE.

By J. C. Chapais.

In the grocery stores of the old city of Quebec there is offered for sale a small soft cheese, very ripe, of a strong characteristic flavour and which is considered a great delicacy by connoisseurs. This cheese, better known in French as "*Le fromage raffiné de l'Isle d'Orléans*" (the word 'raffiné' being a corruption of the word 'affiné', meaning cured or ripened) is a home made product, being manufactured exclusively on the farms of the Island of Orleans, a few miles below the city of Quebec, in the river St. Lawrence, where it is a fairly profitable industry. In view of the many requests for information that have come to me from various persons, I have thought that a description of the manufacturing process of this dainty little cheese might be of sufficient interest to warrant publication.

The information contained in this bulletin was gathered, in the course of a recent official tour, from one of the best families of cheesemakers on the Island, that of Mr. Joseph P. Roberge, of the parish of St. Pierre, who very kindly supplied me with all the facts necessary to enable me to write the following notes.

HISTORICAL.

My first endeavour was to ascertain the origin of this cheese. I found, in the first place, that it has been manufactured for sale from time immemorial in the Island of Orleans. Kalm, a Swedish naturalist, who visited New France in 1749, mentions this cheese in a relation of his journey. I also ascertained that it is made almost exclusively in the parish of St. Pierre and only in ten families, in which the process of manufacture was handed down from father to son, or it would perhaps be more proper to say, from mother to daughter. At the present time, the heads of these families are: Joseph and Louis Aubin, F. X. Côté, Jean Ferland, Joseph Gagnon, Jean Goulet, Pierre Plante, Joseph J. and Joseph P. Roberge and Narcisse Rousseau.

Madame Jos. P. Roberge belongs to the Gosselins, one of the families who were the first to make this cheese at St. Pierre. Of course, it is also manufactured by a few other families in various parishes of the Island, but, strictly speaking, all the Island of Orleans cheese which is marketed is made at St. Pierre.

As this cheese is not unlike many varieties of soft cheese made in France, I believe that it is of French origin and I have endeavoured to support this view with facts. In the first place, I find that all the families above mentioned have belonged to the parish of St. Pierre from the earliest times of the French colony. In the records of the parish, which go as far back as 1679, the name 'Aubin' is mentioned for the first time in 1693, that of 'Côté' in 1684, 'Ferland" in 1680, 'Gosselin' in 1683 and 'Rousseau' in 1680. The name 'Goulet' appears a little later, in 1700, 'Plante' in 1747 and 'Roberge' in 1709. The Gagnon family came rather later from Château-Richer, after 1750. As already stated, the Island of Orleans cheese was made in these families at a very early date, beyond the knowledge of the present generation. It remains to show that these families made cheese in France before they emigrated to Canada. I believe that they did, for two reasons: There are, in France, two districts, or 'départements' where, besides a number of varieties of soft cheese, manufactured in co-operative factories, such as Brie, Camembert, Pont-l'Evêque, Mont-Doré, Port-du-Salut, etc., there is also found a home made cheese which is made much in the same manner as the product of the Island of Orleans. These are the 'départements' of Aube and Yonne, which form part of the old province of Champagne. This home made

40000—3

cheese is the 'Soumaintrain', better known in the trade under the name of Saint-Florentin and which is produced in the Armance Valley. Two characteristic features of the manufacture of the 'Soumaintrain' are that the milk is set (renneted) as soon as it is drawn from the cow and the cheese is cured or ripened in a wooden box. Now, these two features are also characteristic of the making of the Island of Orleans cheese. Another proof that this cheese was made in France by the same farmers who afterwards emigrated and settled in Canada is the fact that the word 'ficèle' or 'fissèle' is used on the Island of Orleans to designate the mould in which the curd is put, at the beginning of the manufacturing process. I find the same word, although spelt differently, in the 'Maison Rustique du XIXe Siècle' and in the sixth edition of Pouriau's 'La Laiterie'. In the first place, it is spelt 'fescelle' and 'faisselle' in the second. Evidently it is the same word brought to this country by the French settlers, who had made the same cheese in France and the pronunciation of which was altered on the Island. However, in Canada, as well as in France, it is applied to a draining-mould, formerly made of wood, but now made of tin, used in the manufacture of cheese.

PROCESS OF MANUFACTURE.

The Island of Orleans cheese is made of whole milk. The quantities given in the following description of the method of making, are for three gallons of milk, which give nine small cheese, weighing a little more than five ounces each, or three to the pound, when ready to be marketed.

Setting the milk.—The milk is set as soon as it is drawn from the cow and whilst it is still at the milking temperature, about 90° Fahr. The extract of rennet used for coagulating is made by the people of the Island in the following manner: The fourth stomach of a calf is taken. The calf must not be more than seven weeks old and fed exclusively on milk. The stomach is cleaned out, washed in cold water, spread on a board, rubbed on both sides with a mixture of two spoonfuls of coarse salt and one teaspoonful of pepper, then put away to dry. When ready to use, it is cut in pieces small enough to pass through the neck of a bottle; then a pint of water, a half-cup of sugar cane syrup (good molasses), a dessert spoonful of coarse salt, and a pinch of pepper are mixed and boiled for ten minutes. The mixture is then taken off the stove and while it is still luke-warm, it is poured into the jar which contains the pieces of rennet, the jar is tightly corked and the resulting solution—or extract of rennet—is ready for use after twenty-four hours. About a spoonful of this extract is required for three gallons of milk. The milk coagulates in half an hour or so.

For setting, a tin pail is used, same as that employed for milking cows, holding about three gallons and a half.

Cutting the curd and removing the whey.—When the milk is completely coagulated, the curd is cut into two-inch cubes with an ordinary knife and as the whey separates from the curd, it is poured out of the pail. About two hours are required for drawing off the whey in this fashion.

Draining the curd and moulding.—When all the whey is run off, the curd is ladled into a perforated tin vessel or mould. (See Fig. 1, Plate I.) This mould, already mentioned, is called 'fissèle' on the Island (from the old French word 'faisselle'.) It is of round, or rather cylindrical shape, made of tin, and the bottom and sides are perforated like a sieve up to one inch from the top. The holes, which are about one-sixteenth of an inch in diameter are placed half an inch apart. The mould is raised on three small legs, one inch high, which are simply round tin cylinders, soldered at the bottom to allow the remaining whey to escape from the bottom and sides.

As many of these moulds are required as the number of cheese that are to be made out of one batch. They are filled with curd, not packed, and a handful of coarse salt for every three cheese is thrown on top of the curd.

Treatment of the curd in the mould.—The moulds containing the curd are placed on a tin pan. This pan is usually 28 inches long, 14 inches wide, with rims 3 inches high. It will hold a dozen moulds.

The pan, with the moulds on top (See Fig. 2, Plate I) is placed on a table, near a stove, where it is held at a temperature of 70° Fahr. It is raised at one end and the whey draining off the mould escapes through an outlet at the lower end. A pail is placed under the outlet to receive the whey, which is used again for washing the cheese, as will be seen later. When the top of the curd appears to be well drained, the curd is taken out of the mould, turned over and replaced in the mould, the side that was on top being this time at the bottom. A little salt is again thrown on the top. The curd is left in the mould until it has sunk to about half of its original height, then it is taken out for the last time.

Placing the cheese on the mat and rack.—When the cheese are taken out of the mould for the last time, they are placed on a rack, four feet three inches long and two feet three inches wide. This rack consists of two sticks, one inch thick, on the top of which are nailed laths one inch wide and half an inch thick, placed one inch apart. There are about 20 to 25 laths in a rack. (See Fig. 1, Plate II.)

Before placing the cheese on the rack, however, the latter is covered with a small mat, made of rush, which is called a 'paillasson' on the Island. The rush used in the making of this mat is the ordinary 'Bull Rush' (*Juncus effusus*), a species chiefly found in ditches and swampy grounds and which grows in large tufts. This mat, which is two feet three inches wide, requires about 150 rushes. These are placed on a table and firmly threaded together by means of a strong needle and a coarse, home made flax thread. As many lengths of thread are used as are required to give the mat sufficient resistance. The rushes are arranged with the heads, or small ends, at one extremity and the tails, or big ends, at the other extremity, so that they are as evenly spaced as possible. Otherwise, the surface of the mat would be uneven, and the cheese, which are very soft when placed on the rack, would not keep their shape. (See Fig. 2, Plate II.) The cheese are placed side by side but not touching each other on the rack, which has previously been covered with the mat. The rack is then placed on a tin pan of the same size, having a rim two inches high around the edge and a tap at one end through which escapes the liquid which drains off the cheese whilst the latter are on the rack. (See Fig. 1, Plate III.)

The pan, with the rack, mat and cheese on top, is hung up one foot from the ceiling, in a room kept at a temperature of about 70° Fahr., generally the kitchen. It is never hung above the stove, as an excess of heat would melt the fat off the cheese. The cheese are turned over twice a day. Two days after being put on the rack, they are washed in a light brine, made by adding two handfuls of coarse salt to a gallon of whey, drawn off from the fresh curd, cut the same day or the day before. For this washing a clean cloth is used. After they are washed, the cheese are placed side by side on a home spun flax linen cloth, about five feet long by three feet wide, laid on a table and they are covered with another cloth. They are left there for two hours until the excess of moisture resulting from the washing has been absorbed by the cloth, then they are put again on the rack, the old mat having first been replaced by a new one. At first, the cheese are washed every other day, then every third or fourth day, as they are getting firmer, so that they may be ready for the ripening process, fifteen days later.

When it is desired, at this stage, to keep a certain number of cheese for some time before ripening them, they are put in a cool, dry place, not heated, but where it does not freeze. Under these conditions, they keep a fairly long time without spoiling.

The ripening process.—Immediately before ripening, the cheese are prepared in the following manner. They are put in a vessel, large enough to hold them all conveniently; the vessel is filled with cold water until the cheese are covered and two handfuls of coarse salt are thrown in the water. The cheese that come directly off the

rack are left twenty-four hours in the water; those that have been kept for some ti after being taken off the rack are left from thirty-six to forty-eight hours.

After this immersion in cold water, each cheese is wrapped in a square piece linen cloth, nine inches square, of the same make as the cloths already mentione The face of the cheese, that is, the surface that is to be on top during the ripeni is laid on the cloth, and the four corners are brought around the under surface. T pieces of cloth are first dipped in a luke warm brine and simply wrung. The chee which are then one inch thick, are placed in a box three and a half feet long, eighte inches wide and fourteen inches deep. The length and width of the box may va with the number of cheese that are to be ripened, but the depth remains always t same. There are in the bottom of the box from six to eight holes, half an inch diameter and at equal distances apart. A box of this size easily holds three rows cheese in width by seven rows in length, each row being twelve chees high, or t hundred and fifty-two cheese. When the box is filled, it is covered with a cloth of t same quality as those already mentioned, and which has also been soaked in brine a it is placed in a cellar where it is kept at a temperature of about 45° Fahr.

Care of the cheese during ripening.—When the cloths in which the cheese a wrapped begin to dry, they are moistened with a light, luke warm brine. This proc is repeated every other day. When they begin to turn yellow, they are washed in c water and afterwards rinsed in water to which a little salt has been added. At ev washing, of course, the cloths are taken off the cheese and put on again after washi This goes on for three weeks. At this stage, the body of the cheese yields und finger pressure.

Moulds.—Great care must be taken to avoid the growth of moulds on the chees A continual watch must be kept. Should the cellar be too warm or too damp, mou (*penicillium*) may develop. Should this happen, the cloth must be taken off the chee and washed, as the mould greatly injures the body of the cheese.

How the cheese are prepared for the market.—Twenty-four hours after the l washing of the cloths, that is after twenty-one days of ripening, the cheese are wrapp for the last time. All yellow parts of the surface are scraped until the cheese is pe fectly white. Then the cheese are wrapped, one by one, in ordinary cheese cloth or i paraffined paper. Each cheese is then five inches in diameter, one inch thick an weighs on an average five ounces and one third, which gives three cheese to the pound

Time required to make and ripen the cheese.—The time required for the vario stages of the making is as follows:—

Renneting and coagulating	½ hour.
Cutting the curd and drawing off the whey	2 hours.
Draining curd in moulds	10 "
Length of time on racks	15 days.
Ripening	21 "

Total time, 36 days, 12½ hours.

GENERAL NOTES.

People who are familiar with the manufacture of the ordinary soft cheese, such a Brie and Camembert will readily perceive the essential points of difference betwee their method and the method of making our 'Island of Orleans Cheese'. At the begin ning of this article, I stated that the manufacturing process of the Soumaintrain o St. Florentin cheese resembled, in several features, that of the Island of Orleans chees

FIGURE 1- PAN FOR HOLDING RACK AND MAT.

FIGURE 2.—PAN WITH RACK AND MAT IN PLACE.

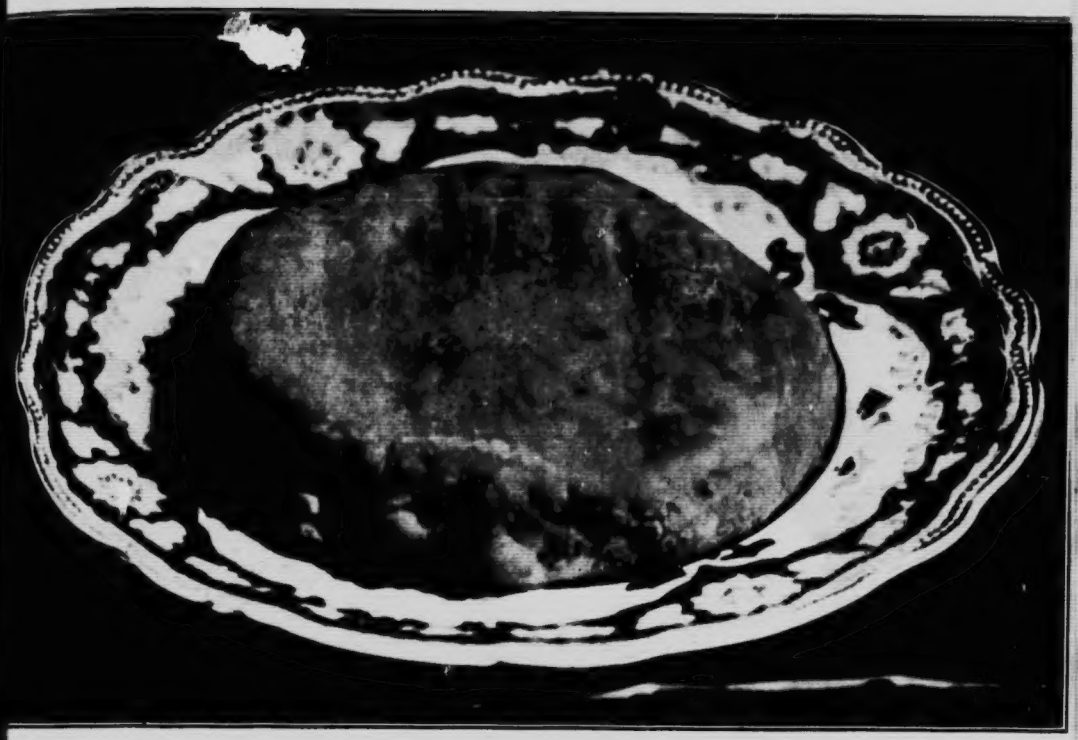
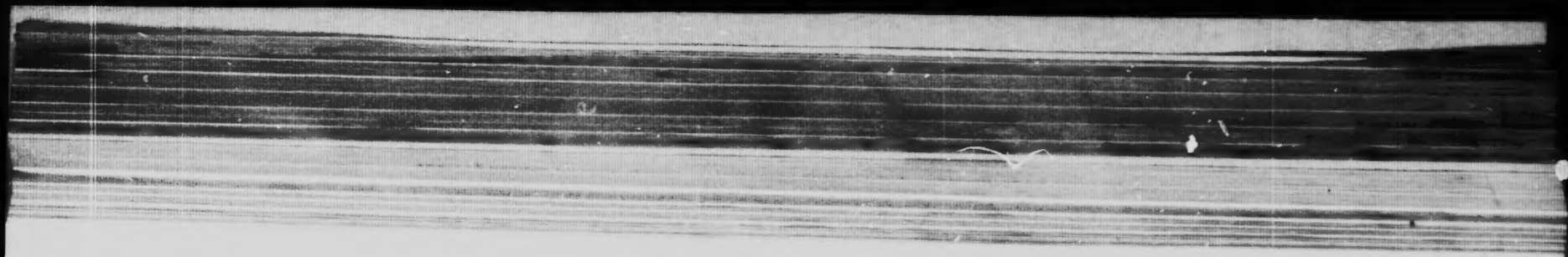


Figure 1.—Island of Orleans Cheese.

Figure 2.—Madame Joseph P. Roberge.



In support of this assertion, I quote here an extract of an article published by Mr. Pierre Larue in the "*Journal d'Agriculture Pratique*" on the Soumaintrain cheese:—

"The main fact in connection with the Soumaintrain is that *all operations are performed in an alkaline medium*. This is the essential point of difference between the Soumaintrain and all other soft and ripened cheese like the Brie. The object of setting the milk immediately after milking is to avoid any development of acidity.

Owing to this rapid coagulation of the milk, all the fat goes into the cheese and the latter has a higher nutritive value and more flavour. It melts in the mouth. The fats, as is well known, retain the odours.

During the ripening of the cheese, there is a breaking down of the casein and a fermentation of the lactose, resulting in a soft, mellow bodied cheese, more digestible, more appetizing and of better flavour. This is the chief object of ripening.

This transformation of the cheese is caused by the diastase of caseose and by microbes of the Tyrothrix type. These agents of fermentation give off gaseous products, particularly ammonia. They develop in the absence of oxygen. This is why the ripening of Soumaintrain is done in boxes. The ammoniacal atmosphere obtained in this way has the further advantage of helping in rendering the casein soluble."

Character of the Island of Orleans Cheese.—A good Island of Orleans cheese never shows any moulds. The colour is creamy white on the outside, of a deeper shade of cream inside; the body is meaty, soft, mellow. A well ripened cheese, ready for consumption does not liquefy, but melts readily in the mouth. It gives off a strong ammoniacal odour, disagreeable to most people. As already stated, the cheese is five inches in diameter and one inch thick. (See Fig. 1, Plate IV.)

They are made from the middle of September to the middle of March only.

Analysis.—An analysis of the cheese was made at my request by Mr. A. I. Tourchot, Chemist, Chief of the Official Chemical Laboratory of the Province of Quebec, at the St. Hyacinthe Dairy School. I am greatly indebted to Mr. Tourchot for his kindness in regard to this matter and beg to offer him my sincere thanks.

Water	53·82%
Total solids	46·18%
Composition of total solids.	
Fat	25·35%
Solids not fat	20·83%
Composition of solids not fat.	
Casein or albumin and salts soluble in hot water	5·02%
Casein and salts insoluble in hot water	15·81%
Free ammonia and ammoniacal salts expressed as ammonia	0·701%
Total nitrogen	2·77%
Chloride of sodium (kitchen salt) in the solids not fat, soluble in hot water	1·71%

PROFIT IN MANUFACTURE.

We now have to see what profit the industry leaves to the farmers of St. Pierre. We will have to take into account the value of milk in the Island during the manufacturing season, the cost of material and accessories for making the cheese; the help required and the selling price of the cheese. All the figures here given were supplied by the farmers themselves.

On the Island of Orleans, the milk is worth only 12 cents a gallon; it is w[orth] 25 cents a gallon in the city of Quebec, but the farmers of the Island cannot co[n]veniently cater to the city trade, owing to the long trip over land and water.

The material required for making consists of moulds, which cost 10 cents ea[ch] or $1.20 a dozen, pans for the draining of the curd while in the moulds, 75 cents ea[ch] racks, 60 cents each, pans for the rack, $2, mats, 20 cents, pieces of cloth, 3 cents ea[ch] table cloths, $1.

The salt for one dozen cheese costs ½ cent, parchment paper or cloth for the sa[me] 1 cent, and help for manufacturing one dozen cheese, 8 cents.

In Quebec, the cheese is sold wholesale, one dollar a dozen. With these figur[es] it is an easy matter to figure out the cost of the cheese to the maker and the pro[fit] derived.

For a dozen cheese, four gallons of milk are required, whic.., at 12 cents per gall[on] is worth 48 cents. The salt paper or cheese cloth and labour cost 9½ cents, or a to[tal] of $0.57½ for a dozen. The rennet costs so little that it is considered a negligib[le] quantity.

Taking into consideration the cost of material, the following figures are arriv[ed] at for a quantity of 150 dozen cheese, the output of an ordinary farm:—

2 dozen moulds at $1.20 a dozen	$ 2 40
1 pan for draining moulds	0 75
5 racks at 40 cents each	2 00
2 pans for racks at $2 each	4 00
7 mats at 20 cents each	1 40
35 pieces of cloth for ripening at 3 cents each	1 05
2 linen table cloths at $1 each	2 00
Total	$13 60

If the annual wear and tear of this material is estimated at 10 per cent of its va[lue] this leaves a sum of $1.36, hardly 1 cent a dozen to be added to the cost of manufa[c]turing 150 dozen cheese. The total cost of production is 58½ cents, or in round numb[ers] 59 cents. As the wholesale price is $1 a dozen, the profit is 41 cents.

The number of cheese made at St. Pierre yearly is from 1,200 to 1,500 dozens, o[r] an average of 135 dozen per farm. The total profit thereon is $553.50, which, divid[ed] among the ten families engaged in the industry, gives $55.35 per family. The tot[al] quantity of milk used being 5,400 gallons or 54,000 lbs., the milk is therefore sold a[t] 25 cents a gallon, 10 cents of which is left to the maker. The price obtained for th[e] milk according to the usual mode of computing in ordinary factories, is $2.50 a hund.ed pounds.

Acknowledgment.—In closing this article on the Island of Orleans cheese, I have a very agreeable duty to perform. I beg to present to my readers Mde. Joseph P. Roberge, one of the best cheesemakers of the Island. (See Fig. 2, Plate IV.)

As already stated, Madame Roberge belongs to the Gosselin family, the members of which were among the best cheesemakers of the Island, from generation to generation.

In the preparation of this work, I am greatly indebted to Madame Roberge and to her husband, Monsieur Joseph P. Roberge, who very kindly and obligingly, through several interviews and many letters, gave me all the information that I required to enable me to write these notes. Madame Roberge expresses herself very amply in speaking as well as in writing and her explanations were always [illegible]. Mr. Roberge was kind enough to bring to me at Ste. Pétronille all the materials used in the manufacture of the cheese, so that I might take photos to illustrate this article. I beg to tender them here my best thanks.